CLAIMS

What is claimed is:

1. Apparatus for placing a semiconductor chip as a flipchip on a substrate, comprising

a flip device for flipping the semiconductor chip, the flip device being formed as a parallelogram construction consisting of a support bracket, a first and a second swivel arm and a connecting arm and comprising a chip gripper arranged on the connecting arm, and

a drive system for the back and forth movement of the parallelogram construction between a first limit position where the chip gripper accepts the semiconductor chip and a second limit position where the chip gripper places the semiconductor chip on the substrate.

2. Apparatus according to claim 1, wherein the parallelogram construction is arranged on a slide moveable in a vertical direction and that the support bracket can be turned in relation to the slide on a vertical rotational axis.

3. Apparatus according to claim 1, wherein the first limit position and the second limit position of the parallelogram construction are defined mechanically by means of extended positions of the drive system.

4. Apparatus according to claim 2, wherein the first limit position and the second limit position of the parallelogram construction are defined mechanically by means of extended positions of the drive system.

5. Apparatus according to claim 1, wherein a force unit is arranged on the first swivel arm which serves to produce the force to be created between the semiconductor chip and the substrate when placing.

6. Apparatus according to claim 2, wherein a force unit is arranged on the first swivel arm which serves to produce the force to be created between the semiconductor chip and the substrate when placing.

7. Apparatus according to claim 3, wherein a force unit is arranged on the first swivel arm which serves to produce the force to be

created between the semiconductor chip and the substrate when placing.

8. Apparatus according to claim 4, wherein a force unit is arranged on the first swivel arm which serves to produce the force to be created between the semiconductor chip and the substrate when placing.

9. Apparatus according to claim 5, wherein the force unit has a pressure cylinder to which a predetermined pressure can be applied which acts upon the chip gripper when placing the semiconductor chip on the substrate.

10. Apparatus according to claim 6, wherein the force unit has a pressure cylinder to which a predetermined pressure can be applied which acts upon the chip gripper when placing the semiconductor chip on the substrate.

11. Apparatus according to claim 7, wherein the force unit has a pressure cylinder to which a predetermined pressure can be applied which acts upon the chip gripper when placing the semiconductor chip on the substrate.

12. Apparatus according to claim 8, wherein the force unit has a pressure cylinder to which a predetermined pressure can be applied which acts upon the chip gripper when placing the semiconductor chip on the substrate.

13. Apparatus according to claim 1, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

14. Apparatus according to claim 2, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

15. Apparatus according to claim 3, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

16. Apparatus according to claim 4, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

17. Apparatus according to claim 5, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

18. Apparatus according to claim 6, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

19. Apparatus according to claim 7, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.

20. Apparatus according to claim 8, wherein the apparatus is a die bonder comprising a pick and place system which picks the semiconductor chips from a wafer table and delivers them to the flip device.